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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,597	10/09/2001	Alexander Sagel	10537/105	3266

26646 7590 05/09/2003

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EXAMINER

MCNEIL, JENNIFER C

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 05/09/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,597

Applicant(s)

SAGEL ET AL.

Examiner

Jennifer McNeil

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

Art Unit: 1775

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 16-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a coating composition comprising at least one rare earth metal, a transition metal, and an alloy of aluminum, does not reasonably provide enablement for a coating comprising at least one rare earth metal, a transition metal, and a Ta-Si-N alloy. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The original disclosure and claims recites numerous compositions for the coating layer. Specifically, the coatings may comprise Cu-Al-Ti, Cu-Al-Ta, Cu-Al-Zr, Pt-Al-Si, or Ta-Si-N. The coating may also comprise Ni-W, Zr-Ti, or Fe-Cr-B. An additional embodiment comprises an alloy of Al, at least one rare earth metal, and a transition metal such as Cu, Ni, and Co. There is no clear teaching of the combination of a rare earth metal, a transition metal, and Ta-Si-N.

Cu-Al-Ti, Cu-Al-Ta, and Cu-Al-Zr are considered alloys of aluminum.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 refers to "amorphous-nanocrystalline". From the specification, it is not clear how this term is defined. The disclosure simply refers to "partially

Art Unit: 1775

crystalline" as being "amorphous and nanocrystalline" (page 6, lines 10-12). Please clarify applicant's intended definition of "amorphous-nanocrystalline".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-24, and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dubois et al (US 5,472,920). Dubois teaches thermal barrier materials for use in turbocompressors, combustion engines, chemical reactors and the like. The thermal barrier may comprise a quasicrystalline alloy of the formula $Al_aCu_bCo_cX_dY_eT_fI_g$, wherein X is at least one of B, C, Si, Ge, P, and S; Y is at least one of Fe, Mn, V, Ni, Cr, Zr, Hf, Mo, W, Nb, Ti, Rh, Ru, and Re (all transition metals); T is at least one rare earth; and I denotes unavoidable impurities. This is considered to meet the limitation of a composition comprising Al-Cu-Si (with X being Si), a transition metal (with Y being a transition metal), and a rare earth (with T being at least one rare earth). While Dubois does not give a specific example of these specific alloys used together, it is the position of the examiner that one of ordinary skill in the art at the time of the invention would find it obvious to choose one of these elements from the small number of choices given by Dubois to form the alloy that is used as a thermal barrier. Considering also that Co is a transition metal, one of ordinary skill would find it obvious to choose for Y one of Zr or Ti, which would give an alloy including Cu-Al-Zr, or Cu-Al-Ti.

Regarding claim 17, as stated above, the composition includes Co.

Art Unit: 1775

Regarding claims 18-21, "[E]ven though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." (*In re Thorpe*, 227 USPQ 964, 966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (*In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP §2113). It is the position of the Examiner that the final product produced by the method limitations in the article claims would be commensurate with the article taught by Dubois.

Regarding claims 22-24 and 29-31, Dubois teaches application of the thermal barrier to components in combustion engines and other high temperature environments. One of ordinary skill in the art would recognize the usefulness of the thermal barrier coating in additional applications where protection and increased life to components in corrosive and highly thermal environs.

Regarding claims 27 and 28, the composition is metallic and also includes a Co alloy, and may include Ni, Ti, or Fe.

Art Unit: 1775

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer McNeil whose telephone number is 703-305-0553. The examiner can normally be reached on Monday through Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 703-308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



JCM
May 6, 2003

Jennifer McNeil
Examiner
Art Unit 1775